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Does wearing a prophylactic ankle brace in recreationally active females increase the force on proximal joints during different phases of the menstrual cycle?

Literature has shown that coaches recommend athletes to wear an ankle brace in order to prevent the likelihood of an ankle injury from occurring. In fact, McHuine et al. (2011) found lace-up ankle braces reduced the occurrence of acute ankle injuries in basketball players. What has not been determined is if ankle braces may have a negative impact on other joints such as the knee. Women have been shown to be at the greatest risk for an anterior crucial ligament (ACL) knee injury due to hormonal fluctuations in the menstrual cycle, a wider Q angle during maneuvers of landing, and potentially lack of mobility at the ankle due to prophylactic ankle braces. The aim of this research is to determine whether recreationally active females, while wearing a prophylactic ankle brace, could potentially increase the force on proximal joints such as the knee. Ten recreationally active females were recruited, and each subject participated in both the experimental and control group. The control group consisted of performing 10-box jump landings (30 cm in height) without wearing an ankle stabilizing orthosis (ASO). The experimental group consisted of the same protocol with the addition of an ASO on the dominant limb. Muscle activation during the landings was recorded via Electromyography (EMG). To determine the impact of hormonal fluctuation during the menstrual cycle, each condition occurred at day 9 (low estrogen) and 14 (peak estrogen) of their menstrual cycles. Data collection was not complete at the time of abstract submission.